

PATENT CLAIMS:

1. A bodywork part of a vehicle having a carrier made of metal, and a transparent cover layer,  
at least one thin-film solar cell being applied to the carrier of the bodywork part and the carrier with thin-film solar cell being covered by the transparent cover layer.
2. The bodywork part of a vehicle as claimed in claim 1,  
wherein the transparent cover layer constitutes a coating layer, in particular a clearcoat layer.
3. The bodywork part of a vehicle as claimed in claim 1 or 2,  
wherein the thin-film solar cell constitutes a CIS-, CIGS-, CIGSS-, CdTe- or Si-based thin-film solar cell.
4. The bodywork part of a vehicle as claimed in one of claims 1 to 3,  
wherein an intermediate layer made, in particular, of CdS or ZnSe is arranged between the transparent cover layer and the thin-film solar cell.
5. The bodywork part of a vehicle as claimed in one of claims 1 to 4,  
wherein a layer made of Tefzel is arranged between the transparent cover layer and the thin-film solar cell.
6. The bodywork part of a vehicle as claimed in one of claims 1 to 5,  
wherein, a separating layer, in particular made of polyimide or RTV-silicone, is provided between the carrier made of metal, in particular made of steel, and the thin-film solar cell.
7. The bodywork part of a vehicle as claimed in one of claims 1 to 5,  
wherein a carrier made of metal, in particular made of steel, is provided as an electrode of the thin-film solar cell.

8. The bodywork part of a vehicle as claimed in one of claims 1 to 7, wherein, as electrical contacts for the thin-film solar cell, the upper electrodes are formed using indium tin oxide and the lower electrodes are formed using copper, aluminum, steel, Kovar or molybdenum.
9. The bodywork part of a vehicle as claimed in one of claims 1 to 8, wherein a color layer is provided on that side of the thin-film solar cell which is assigned to the transparent cover layer, said color layer being formed in particular by the transparent cover layer or by the layer made of Tefzel.
10. The bodywork part of a vehicle as claimed in one of claims 1 to 9, wherein the carrier has a curved surface.
11. The bodywork part of a vehicle as claimed in claim 10, wherein the bodywork part constitutes a part of a vehicle roof, or of a boot lid, of a bonnet or wing, door or bumper.
12. A method for producing a bodywork part as claimed in one of the preceding claims 1 to 9, characterized by the production of the metallic carrier, by the step-by-step application of the various layers of the thin-film solar cell in particular with additional layers to the carrier, which is used as an electrode of the thin-film solar cell, and by the final application of a transparent cover layer, in particular of a clearcoat.